an injector comprising two piston drive units, each of the piston drive units adapted to engage a syringe mounted on the injector for injecting fluid into a patient during a magnetic resonance imaging procedure; and

an injection control unit operably associated with the injector; and

a display unit positioned external to the shielded room and in communication with the infusion apparatus.

64. (New) The patient infusion system of claim 63, wherein the injection control unit comprises a battery for powering the injector.

65. (New) The patient infusion system of claim 63, wherein the injection control unit is remotely positioned from the injector.

66. (New) The patient infusion system of claim 65, wherein the injector and the injection control unit are connected by a non-rigid drive connection.

67. (New) The patient infusion system of claim 63, wherein the infusion apparatus and the display unit communicate with each other by means of a communication link disposed therebetween.

68. (New) The patient infusion system of claim 67, wherein the communication link comprises a fiber optic line.

69. (New) The patient infusion system of claim 67, wherein the communication link comprises means for transmitting and receiving electromagnetic radiation through a window in the shielded room.

70. (New) A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising

an injector comprising two piston drive units, each of the piston drive units adapted to engage a syringe mounted on the injector for injecting fluid into a patient during a magnetic resonance imaging procedure; and

an injection control unit operably associated with the injector; and

a controller in communication with the infusion apparatus to control the operation thereof.

71. (New) The patient infusion system of claim 70, wherein the injection control unit comprises a battery for powering the injector.

72. (New) The patient infusion system of claim 70, wherein the injection control unit is remotely positioned from the injector.

73. (New) The patient infusion system of claim 72, wherein the injector and the injection control unit are connected by a non-rigid drive connection.

74. (New) The patient infusion system of claim 70, wherein the controller is positioned at least in part within the room shielded from electromagnetic interference.

75. (New) The patient infusion system of claim 74, wherein the controller comprises at least a system controller and the injection control unit.

76. (New) The patient infusion system of claim 75, wherein the controller relies at least in part for its communication with the infusion apparatus via a communication link.

77. (New) The patient infusion system of claim 74, wherein the communication link comprises a fiber optic line.

78. (New) The patient infusion system of claim 74, wherein the communication link comprises means for transmitting and receiving electromagnetic radiation through a window in the shielded room.